



# VH

## 铝电解电容器-贴片型

## Aluminum electrolytic capacitor- SMD type

### 特点 Features

- 产品直径 Case diameter: :  $\Phi$  4mm –  $\Phi$  12.5mm
- 适用于再流焊。 Reflow soldering is available.
- 适用于高密度表面组装。 Available for high density surface mounting.
- RoHS指令已对应完毕。 Adapted to the RoHS directive.

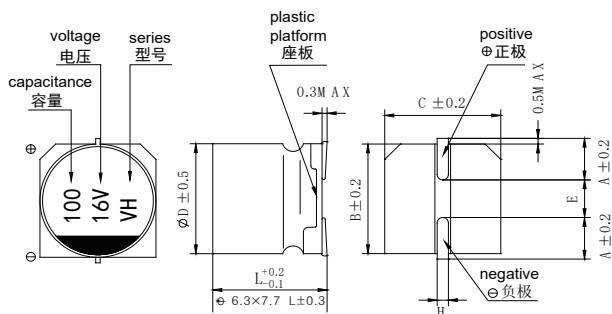


### 主要技术性能 Specifications

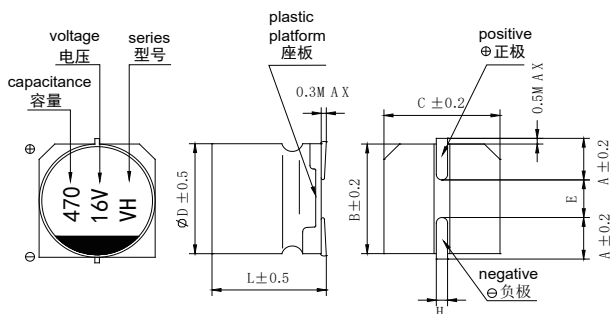
项目 Items	特性 Performance Characteristics												
工作温度范围 Operating Temperature Range	-55~+105°C(6.3~100V), -40~+105°C(160~450V)												
额定电压范围 Rated Voltage Range	6.3~450V												
标称容量范围 Nominal Capacitance Range	1~2200 $\mu$ F												
标称容量允许偏差 Capacitance Tolerance	$\pm$ 20% (20°C, 120Hz)												
漏电流 Leakage Current	6.3~100V						160~450V						
	I $\leq$ 0.01CRVR or 3( $\mu$ A), 取较大者 (2分钟) CR: 标称容量 ( $\mu$ F) UR额定电压 (V) I $\leq$ 0.01CRVR or 3( $\mu$ A) Whichever is greater(at 20°C, after 2 minutes)						I $\leq$ 0.04 CRVR +100( $\mu$ A) (20°C, 1分钟) CR: 标称容量 ( $\mu$ F) UR额定电压 (V) I $\leq$ 0.04CRVR +100( $\mu$ A) Whichever is greater(at 20°C, after 1 minutes)						
损耗角正切 (tg $\delta$ ) Dissipation Factor (Max) 20°C, 120Hz	U <sub>R</sub> (V)	6.3	10	16	25	35	50	63	80	100	160~250	350~450	
	tg $\delta$	0.32	0.24	0.20	0.16	0.14	0.12	0.12	0.11	0.10	0.15	0.20	
耐久性 Load Life	+105°C施加额定电压2000小时后, 电容器应满足以下要求: After 2000 hours . application of rated voltage at 105°C, the capacitor shall meet the following requirement:												
	容量变化率 Capacitance Change	$\pm$ 30%初始值以内(160~450V为 $\pm$ 20%) Within $\pm$ 30% of the initial value ( $\pm$ 20% of 160~450V)											
	损耗角正切 Dissipation Factor	$\leq$ 300%初始规定值(160~450V为 $\leq$ 200%) Not more than 300% of the initial specified value( $\leq$ 200% of 160~450V)											
漏电流 Leakage Current	$\leq$ 初始规定值 Not more than the initial specified value												
高温贮存 Shelf Life	+105°C 贮存1000小时后, 加额定工作电压30分钟, 电容器应满足以上耐久性要求 After storage for 1000 hours at +105°C, UR to be applied for 30 minutes ,the capacitors shall meet the requirement of load life above												
低温特性 Low Temperature Stability 阻抗比 Impedance Ratio (120Hz)	UR (V)	6.3	10	16	25	35	50	63	80	100	160~250	350~450	
	Z(-25°C)/Z(+20°C)	4	4	3	2	2	2	2	3	3	3	6	
	Z(-40°C)/Z(+20°C)	-	-	-	-	-	-	-	-	-	6	10	
	Z(-55°C)/Z(+20°C)	12	8	6	4	3	3	3	3	3	-	-	
耐焊接热 Resistance to Soldering Heat	在250°C的条件下, 电容器在热板上保持30秒, 然后从热板上取出电容器, 让其在室温下恢复, 电容器应满足以下要求: The capacitors shall be kept on the hot plate maintained at 250°C for 30 seconds. After removing from the hot plate and restored at room temperature, they meet the following requirement.												
	容量变化率 Capacitance Change	$\pm$ 10%初始值以内 Within $\pm$ 10% of the initial value											
	损耗角正切 (tg $\delta$ ) Dissipation Factor	$\leq$ 初始规定值 Not more than the initial specified value											
漏电流 Leakage Current	$\leq$ 初始规定值 Not more than the initial specified value												

## 外形图及尺寸表 Case Size Table

Φ4~Φ6.3



Φ8~Φ12.5



单位 Unit: mm

	4×5.4	5×5.4	6.3×5.4	6.3×7.7	8×6.5	8×10.5	10×10.5	8×12.5	10×12.5	12.5×13.5
A	1.8	2.1	2.4	2.4	2.9	2.9	3.2	2.9	3.2	4.7
B	4.3	5.3	6.6	6.6	8.3	8.3	10.3	8.3	10.3	13
C	4.3	5.3	6.6	6.6	8.3	8.3	10.3	8.3	10.3	13
E	1.0	1.3	2.2	2.2	2.3	3.1	4.5	3.1	4.5	4.5
L	5.4	5.4	5.4	7.7	6.5	10.5	10.5	12.5	12.5	13.5
H	0.5~0.8					0.8~1.1				

注: 160~400产品L值公差为±1

## 标称电容量、额定电压、额定纹波电流与尺寸对应表 Nominal Capacitance, Rated Voltage, Rated Ripple Current and Case Size Table

电压WV (Vdc)	容量Cap (μF)	产品尺寸	纹波电流	电压WV (Vdc)	容量Cap (μF)	产品尺寸	纹波电流	电压WV (Vdc)	容量Cap (μF)	产品尺寸	纹波电流	电压WV (Vdc)	容量Cap (μF)	产品尺寸	纹波电流	
6.3	22	4×5.4	22	16	330	8×10.5	290	50	1	4×5.4	6.3	100	100	12.5×13.5	390	
	33	4×5.4	26		470	8×10.5	320		2.2	4×5.4	11		10	8×10.5	57	
	47	5×5.4	36		680	10×10.5	470		3.3	4×5.4	14		15	8×12.5	65	
	100	5×5.4	38		1000	12.5×13.5	560		4.7	5×5.4	19		22	10×12.5	80	
	220	6.3×5.4	86		1200	10×12.5	520		10	6.3×5.4	36		33	12.5×13.5	180	
	330	6.3×7.7	105		10	5×5.4	21		22	6.3×5.4	32		10	10×10.5	75	
	470	8×10.5	340		22	5×5.4	23		33	6.3×7.7	60		15	10×12.5	81	
	680	8×10.5	350		47	6.3×5.4	48		47	8×10.5	230		22	12.5×13.5	220	
	1000	10×10.5	495		100	6.3×7.7	86		100	8×10.5	230		2.2	8×10.5	30	
	1500	10×12.5	560		220	8×10.5	240		220	10×10.5	375		3.3	8×10.5	36	
2200	12.5×13.5	690	330	10×10.5	410	330	12.5×13.5	500	4.7	8×10.5	42					
10	10	4×5.4	20	470	10×10.5	450	10	6.3×5.4	26	6.8	8×10.5	64	250	8.2	10×10.5	70
	22	5×5.4	27	560	10×12.5	500	22	6.3×7.7	48	10	10×10.5	72				
	33	5×5.4	35	680	10×12.5	550	47	8×10.5	150	22	12.5×13.5	150				
	47	5×5.4	34	1000	12.5×13.5	560	100	10×10.5	310	2.2	8×10.5	29				
	100	6.3×5.4	60	4.7	4×5.4	16	220	12.5×13.5	480	3.3	8×10.5	30				
	220	6.3×7.7	105	10	5×5.4	27	10	6.3×7.7	35	4.7	8×12.5	40				
	470	8×10.5	320	22	6.3×5.4	44	22	8×10.5	90	5.6	10×12.5	51				
	680	10×10.5	395	33	6.3×5.4	48	33	10×10.5	100	6.8	10×12.5	52				
	1000	10×10.5	450	47	6.3×7.7	80	47	10×10.5	150	8.2	10×12.5	55				
	2200	12.5×13.5	690	100	8×10.5	240	100	10×12.5	180	10	12.5×13.5	75				
16	10	4×5.4	18	220	10×10.5	430	4.7	6.3×5.8	18	4.7	10×12.5	40	400	4.7	10×12.5	40
	22	5×5.4	30	330	10×10.5	450	10	6.3×7.7	24	10	12.5×13.5	70				
	33	5×5.4	32	470	10×12.5	510	22	8×10.5	100							
	47	6.3×5.4	50	560	12.5×13.5	530	33	10×10.5	150							
	100	6.3×5.4	60	680	12.5×13.5	550	47	10×12.5	180							
	220	6.3×7.7	100				82	12.5×13.5	310							

I<sub>r</sub> = Rated ripple current (mA) (105°C, 120Hz) I<sub>r</sub> = 额定纹波电流 (mA) (105°C, 120Hz)

## 额定纹波电流频率修正系数 Frequency correction factor for ripple current

Frequency 频率	50Hz	120Hz	300Hz	1KHz	10K~100Hz
Coefficient 系数	0.70	1.00	1.17	1.36	1.50